DETERMINANTS OF GROWTH IN THE MENA COUNTRIES

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ABSTRACT

The overall growth performance of the MENA region over the period 1960-1998 has been both mixed and characterized by a higher degree of volatility compared with other regions in the world. In comparing the growth pattern of the MENA region within an international perspective, we have found that: capital is less efficient; the natural resource curse more pronounced; trade openness less beneficial to growth; the impact of adverse external shocks higher; and the effect of output volatility on growth more detrimental. Total Factor Productivity Growth (TFPG) in the MENA region, was not an important source of growth in comparison with other regions. Non-oil and diversified economies have faired much better than oil-exporting countries both in terms of output growth and TFPG. Finally, the degree of exposure to internal and external shocks, the extent of economic diversification and international competitiveness, were found to be important factors explaining variations in growth performance within the MENA region.

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1. Introduction

Over the last fifteen years or so, growth performance of the MENA region as a whole has been disappointing and mixed relative to that of the rest of developing countries.[1] In comparison with other regions in the world, growth rates in MENA countries have been remarkably volatile and at times lower than that of the poor-performing regions such as Sub-Saharan Africa (SSA).

This growth pattern is believed to be inextricably linked to several characteristics of most of the countries in the region notably, their heavy dependence on oil; weak economic base; high population growth and unemployment rates; low rates of returns on investment in physical and human capital; low level of integration in the world economy; under-development of market institutions and, with very few exceptions, the omnipresence of the State.

The relative better growth performance of MENA countries in the 1960's, 1970's and the first half of the 1980's is largely attributed to favorable external environment in the form of high energy export prices. This situation has been reversed in the second half of the 1980's and early 1990's resulting in sharp declines in domestic investment, savings and growth. Although oil is justifiably perceived by many as the most important source of growth in the MENA countries, other factors have also played an important role in shaping the growth picture of the region.[2]

[1] Unless otherwise mentioned, the definition of MENA followed in this paper includes: Algeria, Bahrain, Comoros, Djibouti, Egypt, Iran, Iraq, Jordan, Kuwait, Lebanon, Libya, Mauritania, Morocco, Oman, Qatar, Saudi Arabia, Somalia, Sudan, Syria, Tunisia, Turkey, United Arab Emirates, and Yemen. On the other hand, MENA oil-exporting countries are: Algeria, Bahrain, Iran, Iraq, Kuwait, Libya, Oman, Qatar, Saudi Arabia and United Arab Emirates.

[2] MENA countries currently sit on more than the third of proven world oil reserves and account for more than 30% of actual world production.

There is hardly any disagreement about the necessity for MENA countries to rely on less volatile sources of growth that would insulate the region from adverse external developments. The external environment is not likely to be as favorable as it had been since the early 1970's and until the mid 1980's. Analyzing what have been the main determinants of the recent growth performance is a first step toward identifying what needs to be done to make growth more sustainable.

The recent empirical growth literature has suggested a wide range of growth correlates. The list includes among others, initial conditions, macroeconomic performance, trade openness, government size, income distribution, financial market development, natural resource abundance, institutions, politics and physical geography. These ultimate sources of growth have been shown to be as important as the proximate factors of growth namely, physical capital, labor and the efficiency with which these factors are combined.

This paper will attempt to use the broader framework provided by the recent empirical growth literature to measure the relative contribution of the main sources of growth in the MENA countries. It will also address the issue of whether MENA growth pattern is unique or could be fully explained by means of a global framework. For this reason, the recent growth pattern of the MENA region will be analyzed within both international and regional perspectives. By doing so we hope to map out the micro-growth issues that need to be addressed by further studies at individual-country level.

Section 2 gives an overview of the growth performance of the countries of the region during the period 1960-1998. Using an empirical model based on large cross-country data sets, section 3 provides an account for the main proximate and ultimate sources of growth in the MENA region. Section 4 analyzes the growth performance of the MENA countries from a regional perspective. Section 5 concludes.

2. Growth Record of the MENA Region

Over the period 1960-1998, MENA growth has followed the growth pattern of the World economy. As shown in table 1, after a period of relatively high growth rates during the 1960's and 1970's, growth has slowed down during the 1980's and 1990's. However, the impact of the worldwide recession in the early 1980's has been more pronounced for MENA countries whose growth performance has not only been below world average but also weaker than that of the low-performing SSA. Table 1 also shows that during the last three decades, MENA non-oil exporting countries have fared better than oil-exporting countries in terms of per capita GDP growth.

Another salient feature of the recent growth performance of MENA countries is its high volatility. Figure 1 shows that during the period 1960-1998, the average per capita GDP growth rate of MENA countries has been characterized by a high variability in comparison with world average. Starting from the second half of 1980's, variability of growth rates has declined somewhat but remained higher than that of the average world growth rate. Figure 2 shows, on the other hand, that the average growth rate of MENA oil-exporting countries is much more volatile than their non-oil counterparts.

Tables 2 and 3 show that the patterns of investment and saving in the MENA countries, have also followed the growth pattern described above. Both investment and domestic saving in the MENA region have declined sharply during the 1980's and 1990's. Oil countries have borne the brunt of this adjustment with substantial declines in both investment and saving ratios. Non-oil countries have maintained, over the same period, fairly stable investment rates above the level of their declining saving ratios.

In comparing terms of trade fluctuations across a number of regions for the period 1980-1995, Gamo et al. (1997, p. 14) have found that oil-exporting countries in the region have the highest terms of trade variability. In addition, terms of trade variability of MENA non-oil exporting countries were also found to be higher than that of developing countries as a group. This pattern may be attributed to the excessive reliance of MENA countries on volatile oil receipts accounting for a large part of their total export receipts. Even non-oil MENA countries have been subject to fluctuation in their own terms of trade, being exporters of primary products themselves. Oil price fluctuation has also indirectly affected them through its impact on the flows of workers 'remittances, investment and financial assistance flows from oil-exporting countries. All these factors combined show that the MENA region is remarkably vulnerable to external shocks.

3. MENA Economic Growth in a Global Context

In this section we will use a cross-country regression framework to put the MENA region economic growth in international perspective. We will try to identify a small set of regressors that would account for most of the variation in cross-country per capita GDP growth. The absence of guidance from growth theory as to which variables to include, makes the choice among the great number of possible correlates of growth a difficult one. However, our selection will be guided by variables that proved more "robust" than others in recent literature.[3]

In addition, we will favor variables that are believed to have shaped MENA region's recent growth performance. We will not focus here on the problems of causation, endogeneity or the possible correlation between growth correlates.

[3] There is a lot a spuriousness associated with the Barro-type (Barro, 1991) cross-country regression framework. However, it could be used as a suggestive tool to measure the relative contribution of the many sources of growth across countries and regions.

3.1. Variables to be Used in the Analysis

The first type of variables included in the analysis is that pertaining to initial conditions. Recent empirical growth literature provides ample evidence about the existence of conditional income convergence across countries. Under the assumption of diminishing marginal returns to capital, the lower the initial level of income the greater the opportunity of catching up through higher rates of capital accumulation and diffusion of technology.

This convergence is evidenced by the negative relationship between the growth rate of per capita GDP and the initial level of GDP per capita after controlling for other relevant variables such as measures of government policies, institutions, politics and variables related to the character of national population. We will take the 1960 level of real GDP per capita, Y60, as a measure of initial income.

Countries with higher initial stock of human capital and knowledge have also been found to be able to forge ahead through higher growth rates. The simple inclusion of a measure of human capital in a Barro-type regression equation, however, overlooks the dual role played by the latter. Human capital not only affects growth as an additional factor of production, together with physical capital and labor, but also the efficiency with which these factors are combined.

Ben Habib and Spiegel (1994), have found evidence that human capital affected Total Factor Productivity Growth (TFPG) through its impact on the capacity of a country to innovate and the capability of using and adapting foreign technology. Arguably, human capital also encourages the accumulation of other factors of production. In our analysis, a measure of human capital will be used to explain both growth as well as TFPG. As a proxy for the level of human capital, we will take the 1960 primary school enrollment ratio, PESENR60.

Since higher investment ratios, INVY, are generally found to be associated with higher growth rates, we include this variable as a regressor without reference to issues of causality and endogeneity. In addition and in order to account for the impact of exogenous shocks, we have included for each country in the sample the GDP per capita growth of its trading partners weighted by trade shares, GPART.[4] It is conventionally assumed that positive external shocks are associated with higher growth and vice versa.

Macroeconomic performance plays an important role for growth sustainability. Fisher (1993) has shown that growth is negatively associated with inflation, large budget deficits and distorted foreign exchange markets. Among the three measures, we favor inflation for several reasons. First, internationally comparable data on budget deficits are scattered and not available for a large number of MENA countries. On the other hand, the widely used black market premium rate (BMP) as a measure of distortion in foreign exchange market is neither a good proxy for the level of distortions in the economy nor an appropriate measure of the adequacy of macroeconomic policies. For instance, the low BMP rates in Egypt or the Arabian Gulf countries reflect more the abundance of foreign exchange more than the absence of distortions in the economy or the presence of stable macroeconomic environment. In addition, the high BMP in many countries of the MENA region tend to reflect the impact of wars and socio-political instability characterizing these countries.

Openness has been used extensively in the literature as a major determinant of growth performance. Openness affects growth positively to the extent that it magnifies the benefits of international knowledge spillover and technological diffusion as well as enforces cost discipline through import competition and the drive to export. Openness measured by the ratio of trade to GDP is simply not appropriate for the case of MENA countries. Most MENA countries have high trade ratios reflecting partly the nature of their factor endowment.

[4] The use of the percentage change in the terms of trade as a proxy for external shocks has not resulted in statistically significant impact on growth.

Following the work of Sachs and Warner (1995), we adopt the definition of openness, SOPEN, reported in Sachs and Warner (1997). Openness purports to the fraction of years during the period 1970-1990 in which the country is rated as open according to the following criteria: (a) Non-tariff barriers covering less than 40 percent or more of traded goods, (b) average tariff rates below 40 percent, (c) a BMP of less than 20 percent, (d) no extreme controls in the form of taxes, quotas or state monopolies on exports and (e) the country is not considered a socialist country. A value of SOPEN=1 means the country has remained open to trade during the entire period, while a value SOPEN=0 means the country remained completely closed.

Among the recently introduced variables into the empirical literature is natural resource abundance.[5] Sachs and Warner (1997), for instance, have found compelling evidence that countries with high initial ratio of natural resource exports tend to grow slowly in subsequent periods. Earlier findings of development literature about the disappointing performance of resource-abundant countries have motivated their study on the link between natural resources and economic growth.

Natural resource abundance negatively affects growth through several channels. Natural-resource abundant countries tend to exhibit the Dutch-disease syndrome in terms of overvalued exchange rates, and hence the difficulty to develop a profitable export-oriented or import-competing manufacturing sector.[6] Resource-rich countries are also associated with wasteful consumption and public investment behavior, and provide incentives for rent-seeking and other unproductive activities. In addition, it is widely observed that natural resource availability forestalls reform. Finally, the secular decline of world prices of natural resources and their high volatility translate into high uncertainty, which, in turn, impacts negatively growth.

[5] Natural resources are defined as primary agriculture, fuels and minerals.
[6] Radelet et al. (1997), p. 8.

The idea of incorporating natural resource abundance as a correlate of economic growth is of great appeal given the high endowment of MENA countries in natural resources notably, oil. However, despite the fact that they could be a curse for long term growth, natural resources may also contribute positively to growth. Oil export revenues have contributed to the improvement of welfare and helped finance investment in infrastructure and human capital in most MENA countries. In fact, many of the MENA oil-producing countries such as Kuwait, Bahrain, Qatar and the United Arab Emirates, are ranked by the 1999 Human Development Report, among the top 45 countries in the world in terms of the United Nations' Human Development Index.

The ultimate impact of natural resources on growth is therefore an empirical question. In order to measure this impact, we will use the share of exports of primary products in GNP, SXP. This variable is measured for the year 1970 and is borrowed from Sachs and Warner (1997).

A final growth agent that is not very frequently used in the recent empirical growth literature is the role of output volatility in explaining output growth. Volatility to the extent that it properly reflects uncertainty, should be negatively linked to growth. Uncertainty could affect growth through many channels. For instance, under irreversibility and large sunk costs, uncertainty delays investment decisions and affects output growth. Ramey and Ramey (1995) have found empirical evidence on the negative link between output growth and its volatility. Binder and Pesaran (1999) have provided a theoretical rationale for this link based on the statistical properties of stochastic versions of conventional growth models.

In our context, inclusion of a volatility variable is justified on the ground that volatility of output growth is a salient feature of the MENA region. The factors responsible for this volatility include among others fluctuations in world oil prices, weather conditions, workers' remittances, capital flows, not to mention the high level of socio-political instability

and the involvement of many countries in the region in civil wars and regional conflicts. In order to measure volatility, we will use the standard deviation of per capita growth rates, STDG, over time for each country in the sample.

3.2. Cross-Country Regression Results

In order to give an order of magnitude to the contribution of the above agents of growth, we regress the average growth rate of real per capita GDP on the variables described above. All variables, except when it is otherwise mentioned, are averaged over the period 1960-1998 or any sub-period within it, in case of unavailable data. The sample data is made of the 212 countries included in the World Bank database prepared for the Global Research Project (GRP) dealing with the sources of growth in the world. Not all the countries in the sample were used in the analysis since some of them did not have complete data on all the variables pertaining to our analysis. Most of the variables used in this paper, unless otherwise mentioned, come from the GRP database.

In an attempt to disentangle the regional from the global growth characteristics, we have allowed for differentiated growth impacts of the relevant variables depending on whether the country under study is from the MENA region. In other words, each country from the MENA region is allowed to have different slope coefficients from any non-MENA country in the sample. In order to do that, we have included interaction between the variables under study and a dummy variable, MENA, taking one if the country is from the MENA region and zero otherwise.

Table 4 reports the regression results of our model. With respect to the recent empirical literature, our results confirm the relative importance of the investment ratio (INVY), macroeconomic performance (INFL), initial level of income (Y60), human capital (PESENR60), natural resource abundance (SXP) and the degree of openness (SOPEN) in

affecting long-term growth performance. The respective coefficients of these variables were found to have the expected signs and were statistically significant.

Some of the variables portraying the impact of external shocks (GPART), and volatility (STDG), were found to be insignificant for the whole sample. In contrast, these same variables turned out to be very significant for the MENA group. This points to the vulnerability of the MENA countries to external shocks and to the many sources of uncertainty responsible for the high output volatility in the region.

To give further evidence on the vulnerability of the MENA region to external shocks, we have tried different measures of terms of trade change. However, all of these measures turned out to be statistically insignificant. The ambiguous impact of terms of trade on long-term growth has been reported in several instances in the literature.[7] There are several plausible explanations for that. The terms of trade variable has been obtained, given the requirements of our cross-country analysis, by computing its average growth over the entire period 1960-1998. Therefore, the impact of terms of trade as an exogenous shock could be diluted owing to the operated smoothing. In order to take this shortcoming into account, we have used the standard deviation of the terms of trade of each country over the entire period as an alternative. The new variable turned out to be insignificant as well.

The impact of terms of trade on economic growth could be proportional to the dependence of any country on a limited number of exported commodities. In other words, a diversified economy is less likely to be affected by terms of trade decline given that the impact will be limited to a relatively small number of sectors. In contrast, a deterioration in the terms of trade will be felt throughout the economy in case of high export concentration or excessive dependence on a limited number of export commodities such as oil.

[7] For instance, Gamo et al. (1997, p. 27) reported a similar result for the case of several countries in the region.

Finally, the ambiguous effect of terms of trade on growth could be due to the asymmetry of this effect. A persistent improvement in terms of trade might lead to an improvement in income and expenditure, while a deterioration does not necessarily lead to a proportional reduction in these variables. The recent World Bank report on Global Economic Prospects (2000), reports several cases in point from the MENA region.[8] For instance, following the 1998 slump in oil prices, Bahrain, Oman and Saudi Arabia used foreign reserves and accumulated foreign assets to alleviate the pressure on fiscal deficits and trade balances. In contrast, other oil exporters such as Algeria and Yemen with more binding financial constraints had to adjust through expenditure cuts and exchange rate devaluation.

This asymmetry in policy reaction might have affected growth performance in many MENA countries by increasing uncertainty.

Our results also show that the investment coefficient for the MENA region is statistically different from and much lower than, that of the whole sample. This result is, at prima facie, at odd with the fact that MENA countries have persistently maintained investment ratios above world averages.[9] This is largely attributed to the endemic problem of capital inefficiency in the MENA countries.

Many have presented plausible explanations for the low efficiency of capital in the MENA region. Page (1998) suggests that this low efficiency of capital is due to the dominant role of the state and the nature of capital inflows in the region destined mainly to finance public investments and low-productivity projects in the non-tradable sector such as housing. He also points out that protectionism and lack of integration in world economy precluded these countries from boosting their efficiency and competitiveness. Others, such as El-Badawi (1999), argue that the low efficiency of capital may be attributed to the fact that most

[8] World Bank (2000, pp. 142-143).

[9] Refer to table 2 in the paper.

of the countries in the region provide an inadequate institutional support for investment and private sector development.

Openness does not seem to play as an important role for the MENA region as for the whole sample. The lower impact of openness on growth in the MENA region may be explained by the prolonged application of inward-looking strategies based on import-substitution, by many countries in the region during the 1960's and 1970's. The MENA region continues to be among the least integrated regions in the World. This fact is illustrated by table 5, which compares the speed of trade integration of the MENA region with that of other regions in the World.[10]

Oil and natural resource wealth appears to have a more negative impact on the economic growth of the MENA region. All of the arguments, discussed earlier, explaining the negative link between natural resource abundance and growth performance, apply in the context of the MENA region.

The results also show that the evidence of convergence after controlling for relevant growth correlates is weaker for MENA countries. This points to the need to look for other factors that might explain the lack of growth convergence in the region.

The more negative impact of inflation on growth in the MENA region in comparison with the whole sample seems at odd with the fact that MENA is not considered among the inflation-prone regions such as Latin America. However, if the inflation variable is picking up some of the impact of the different sources of policy uncertainty and government-induced distortions in the region, then the above result would make sense.

[10] The speed of trade integration is defined as the percentage change of the ratio of exports to GDP.

3.3. Growth Accounting in International Perspective

To further put growth performance in international perspective, we use the growth accounting framework to see whether factor accumulation or factor productivity have accounted for most of the growth differential between MENA and the other regions in the sample.

Growth can be the result of the growth of inputs such as capital and labor, or their productivity. The debate over the share of inputs as compared with that of their total productivity is still very lively. The empirical evidence is mixed. Many such as Mankiw et al. (1992), argue that the share of physical and human capital together with population growth account for as much as 80 percent of international variation in per capita income. Young (1995) on the other hand, argues that what is often labeled as the "Asian miracle," is the outcome of a temporary rapid factor accumulation. Those holding a different view claim that

TFP is the key to economic growth and that factor accumulation play only a less important role.[11]

In order to carry out the accounting exercise, we have used a two-factor, homogeneous of degree one, Cobb-Douglas production function in per capita form. Capital shares required to measure the relative contribution of factor accumulation and productivity were estimated using the following regression equation:

$$\Delta Log(Y_{it} / L_{it}) = \lambda_i + \alpha_i \Delta Log(K_{it} / L_{it}) + \varepsilon_{it}$$

[11] See for instance, Klenow and Clare (1997).

The slope coefficient in the above equation represents the capital share in output, Y represents real output, K the capital stock and L labor. Y is measured by real GDP and is obtained from World Bank database. The capital stock data are taken from Nehru and Dhareshwar (1994), and L is approximated by total labor force and taken from the World Bank world development indicators. Real GDP and capital stock series are based on 1987 constant prices.

The sample we used comprises 92 countries and data cover the period 1960-1997. The list of countries included in our sample was determined on the basis of the availability of capital stock data in Nehru and Dhareshwar (1994).[12] It should be mentioned that since their capital series stop at the year 1990, we have used fixed investment figures from World Bank database to complete the capital series from 1991 until 1997.

In order to account for the possible impact of the noise generated by the high variability of yearly data, we have estimated two versions of the above equation. A short-term version using original data for the output per worker and capital per worker, and a long-term version using three-year moving averages of the same variables.

Table 6 provides the regional averages of capital shares using the two specifications indicated above. Looking at table 6, several remarks are in order. First, our estimates of the world average capital share were found to be above the commonly assumed values of 0.3 or 0.4. This finding is in line with recent results provided, for instance, in Senhadji (1999). Bisat et al. (1997) have previously found that the average capital share in many countries of the MENA region is well above 0.5 and about 0.7 for some oil-producing countries.

[12] The MENA countries included in the sample are: Algeria, Egypt, Iran, Iraq, Jordan, Kuwait, Libya, Morocco, Sudan, Tunisia and Turkey.

Secondly, high-performing East Asian countries hold the lowest capital shares in the group. And thirdly, Latin American and industrialized countries have the highest capital shares.

These findings have an implication for the computation of TFPG. Given the difference in regional capital shares, applying the same share for all the countries to compute TFPG could be very misleading.

Table 7 provides estimates of the relative contribution of capital, labor and TFPG to economic growth of the countries included in the sample. Overall, the results show the predominance of capital contribution over that of labor and TFPG, in growth performance during the period 1960-1997. This remark holds true for the high performing East Asian countries such as Korea, Malaysia and Thailand. The only exception was Singapore where TFPG contribution exceeded that of capital. TFPG has, in general, contributed positively to the economic growth of the East Asian group in the sample. The only exception was the Philippines.

For the eleven MENA countries included in the sample, only Egypt, Morocco, Tunisia and Turkey managed to have positive TFPG. Out of the seven remaining MENA countries in the sample that had negative TFPG, five were oil-exporting countries.

In order to assess the relative contribution of the variables accounting for inter-regional TFPG performance, we have regressed TFPG on relevant variables based on recently established results in the literature.[13] We conducted these regressions using values for capital shares ranging from 0.3 to 0.7. Each hypothetical value for capital share was

[13] Only 6 MENA countries were included in the analysis given the lack of data. They were: Algeria, Egypt, Jordan, Morocco, Tunisia and Turkey.

applied uniformly over the different countries in the sample. This was done to see whether different values of the capital share affect the impact of the regressors on TFPG.

The included regressors were the quality of institutions, ICRG[14]; inflation rate, INFL; the initial income, Y60; the initial enrollment rate in primary school, PESENR60, and the adopted measure of natural resource abundance, SXP. Other conventional variables such as openness, growth in terms of trade and political stability have been tried but were dropped for lack of statistical significance. Regional dummies were also included in order to account for inter-regional differences.

Table 8 reveals that for lower values of the capital share, the parameter estimates tend to be significant and of the expected signs. Institutions and the stock of human capital, as approximated by the initial enrollment rate, affect positively TFPG. The negative sign attached to the initial income, points to the existence of catching up effect at the TFPG level. Inflation was also found to affect negatively TFPG. Finally, the natural resource curse was found to apply at the productivity level too. In other words, natural resource abundance affects negatively TFPG.

At higher values of the capital share, the explanatory power of the model drops. This is due to the fact that at higher values of the capital shares, capital accounts for a higher portion of overall economic growth as well as TFPG. Hence, the other variables become less relevant. However, it should be mentioned that the only two variables that remained significant for different values of the capital share, were initial income and human capital. This result is widely in line with the recent empirical findings on TFPG.[15] While initial level of income affects the potential of catching up notably through higher productivity; human

[14] Our measure of institutions, ICRG, is a composite of four indicators (a) Government repudiation of contracts, (b) Risk of Expropriation, (c) Rule of Law and (d) Bureaucratic quality. This measure is computed for the decade of the 1980's and is borrowed from Easterly and Levine (1996). Knack and Keefer (1995) were the first to introduce these institutional variables into growth empirics.

[15] See for instance the findings of Senhadji (1999) and Benhabib and Spiegel (1994).

capital affects TFP by determining the capacity of a country to innovate and the speed of technological diffusion.

In order to put MENA countries' TFPG performance into global perspective, we have computed the contribution to TFPG of the relevant variables for different values of the capital share. Table 9 reports the results after applying different regional values for the capital share. Based on our estimation, we have applied the value of 0.5 to the MENA, Sub-Saharan regions as well as to the whole sample. The values applied for other regions were respectively, 0.4 for East Asia and 0.7 for Latin America.

Overall, the results exhibited in tables 9, point to the overriding importance of the quality of institutions and the stock of human capital in explaining the lower productivity performance of the MENA countries in comparison with the high performing East Asian countries and with the rest of the world in general.

More specifically, table 9 shows that human capital, as approximated by initial enrollment ratios, accounts for the MENA region's TFPG under-performance with respect to East Asia and Latin America. Despite the net improvement in many educational educators in the MENA countries, illiteracy ratios remain very high and the educational attainment of the labor force very low in comparison with other regions in the world.

For the year 2000, UNESCO predicts that the illiteracy ratio in the MENA region will be around 31 percent for adults above 15 years compared to 26 percent in the group of developing countries and 13 percent in the East Asia and Pacific region. These statistics are even more alarming given the high gender gap in terms of literacy and in comparison with other regions in the world. The average illiteracy rate among females in the MENA region for the year 2000 is expected to be around 40 percent almost double the average illiteracy rate for

males.[16] Illiteracy among women is linked to poor health and low education attainment among children, and hence the low quality of human capital.

The recent statistics published by Barro and Lee (2000) provide further evidence of the relative weaker educational attainment of the labor force in the MENA region in comparison with other regions in the world. For instance, they estimated that the average years of schooling for the population aged 15 and over, for the year 2000, for the high performing MENA countries such as Egypt, Jordan, Syria, Tunisia and Turkey will be, 5.51, 6.91, 5.77, 5.02, and 5.29; respectively. These rates do not compare favorably with, 8.83 for Argentina, 7.55 for Chile, 10.84 in Korea, 7.05 for Singapore and 8.76 in Taiwan.[17]

Using panel data for six countries in the MENA region, El-Erian et al. (1998, p. 11) have found that the rapid expansion in education did not result in higher productivity or more rapid economic growth.[18] Aside from measurement problems that might have affected their results, they argue that the weak link they have found between education and growth may be attributed to the low quality in the delivery of educational services and labor may be markets distorted educational choices in these countries.

They argue that education systems in the region focus more on repetition of definitions, knowledge of facts and concepts and less on developing critical thinking and problem-solving capacity. On the other hand, the higher wages prevailing in the public sector are set without consideration for alternative employment opportunities in other sectors. This has led to an education system that is focused on preparing students for public employment. ERF (2000) reports that for the early 1990's, the average share of civilian Government employment in the MENA region is about 17.5 percent compared with less than 9 percent for

[16] These statistics are derived from the UNESCO Statistical Yearbook (1999).

[17] These updated statistics are available on the following web site: http://www2.cid.harvard.edu/ciddata/. The data set could also be accessed through the web page of Jong-Wha Lee: http://web.korea.ac.kr/~jwlee.

[18] The countries included in their studies are: Algeria, Egypt, Jordan, Kuwait, Syria and Tunisia.

the developing countries as a group. In addition, the share of central Government wages in GDP is at 10 percent; almost double that of the world average. As rightly argued by the report, these statistics reflect the prevalence of acute job redundancies in the region.[19]

A close line of argument is presented by Ridha (1998) who argues that, the quality of education in most countries of the region is low because education systems are over-politicized to the extent that they deviate from the objectives they are supposed to achieve. He asserts that, the educational systems in the region are manipulated to reach political ends. His argument is best summarized by the following excerpts:

> "Indoctrination replaced free and critical thinking, and authoritarian values permeated every educational tool and practice: the curriculum, the textbooks, and the methodology of teaching." (Ridha 1998, pp. 3-4).

Another argument advanced by Pritchett (1996) can possibly explain the weak link between education and productivity growth in the MENA countries. He argues that in a perverse institutional environment such as the one prevailing in many MENA countries, education and accumulated capital could be used in wasteful and counterproductive activities. In addition, the fact that most of these countries are natural resource-abundant, provides further incentives for the proliferation of rent seeking activities.

The second important factor explaining the underperformance of the MENA region in terms of TFPG is the quality of institutions. Institutions can be defined as the regular and patterned forms of social behavior and interaction among human beings established by formal and informal rules. Institutions matter for growth and productivity because they affect incentives of actors. For they affect the behavior of people in a society and very often lock their behavior within a regularized pattern, institutions may produce path dependence that

[19] ERF (2000), p.6.

could explain prolonged periods of poor economic performance and hence the inability of poor countries to catch up.

Table 10 shows that MENA countries have made some efforts to improve their institutions. Using the average scores for five institutional indicators published by the Political Risk Services, the figures show a net improvement in all indicators between 1984 and 1995. MENA countries have even better scores than world averages for three out of the five reported indicators. The indicators of corruption and bureaucracy remain, however, below world averages. In addition, the average value of the variable used in our paper to depict institutional quality, ICRG, for MENA countries was 4.31. This score is below that of the world average, 5.59, and the high performing East Asian countries, 6.37.

Reducing bureaucratic ineffectiveness, red tape, corruption, excessive government intrusion, and improving the deplorable state of government service delivery; remain, in this regard, major challenging tasks for the MENA region.

4. Explaining Intra-Regional MENA Growth Performance

In the previous section, MENA countries' growth performance has been compared with other reference regions. In this section, we will dwell on the relative performance of individual MENA countries with respect to the region's average performance.

There is a considerable variation in the growth performance of MENA countries. It was shown earlier that growth in oil-exporting countries was subject to a higher variability than that of non-oil exporting countries. In addition, the average growth performance of the oil exporting countries over the period 1960-1998, has been below that of non-oil exporting countries. Table 11 shows that the countries that were able to achieve an average real per capita GDP growth rate over 2 percent a year, during the period 1960-1998 were, except for Oman, non-oil exporting countries. The best growth performers were Egypt, Jordan,

Morocco, Oman, Syria, Tunisia and Turkey. Oman's average growth rate was the highest followed by that of Egypt and Tunisia.

In order to assess the relative performance of each MENA country with respect to the average performance of the MENA group, we have first computed for each country a yearly z-score defined as the distance of its growth rate of GDP per capita with respect to the average per capita growth rate of the whole sample of MENA countries, divided by the standard deviation of this growth rate over the same year. The better achievers have then been defined as those countries whose average z-scores over the entire sample period were positive.

After excluding countries for which ample data were not available, the over-achievers were: Oman (0.43), Egypt (0.30), Tunisia (0.27), Turkey (0.25), Jordan (0.23), Syria (0.12) and Morocco (0.09). All MENA oil-exporting countries, except Oman had negative average z-scores.

Interestingly enough, only countries with relatively high growth rates have managed to achieve positive TFPG over the last three decades or so. Oil-exporting countries have, in general, had negative TFPG. These facts are corroborated by our own estimates and those of the few studies, which have provided estimates for TFP growth rates for countries in the MENA region such as, Bisat et al. (1997) and Nehru and Dhareshwar (1994).

In addition, MENA growth over-achievers had in general the lowest growth variability among the sample group except, Oman. The higher variability of the latter can be attributed to the fact that it is an oil-exporter and therefore subject to the effect of oil price fluctuation.

Available data and the scope of this study do not permit to establish systematic links between growth performance and the country-specific characteristics (structural, policy, initial conditions, institutional, political, and other internal and external factors). Preliminary analysis indicates, however, that the better achievers tend to have above average indicators for integration in the world economy (be it through the crude measure of openness, share of FDI in GDP, or share of manufactured exports in total commodity exports). They also tend to be more diversified and have enunciated economic reform earlier than other countries.

Table 12 exhibits the sectoral distribution of production of selected MENA countries according to their estimated z-scores. The numbers show that countries, which better growth performance, tend to be more diversified than the other countries, with relatively larger manufacturing and service sectors. In contrast, countries with weaker growth performance have either large agriculture or mining and quarrying sectors. The latter countries tend, therefore, to be more exposed to variation in climatic and international market conditions than other countries.

Using the normalized Hirshman export concentration index, we found also that MENA growth over-achievers have the lowest values of this index compared to other countries. For 1995, these indexes were: 0.112 for Turkey, 0.172 for Morocco; 0.211 for Tunisia; 0.244 for Egypt; 0.270 for Jordan and 0.533 for Syria.[20] These rates compare favorably with 0.940 for Kuwait; 0.798 for Iran, 0.796 for Iraq and 0.765 for Oman.

In order to account for the relative growth performance within the MENA region, we have used a cross-country regression framework applied to a panel data of 13 MENA countries and spanning the period 1970-1998. For the sake of increasing sample variation, we have used for each country six five-year period averages for all variables and for the periods 1970-1974, 1975-1979, 1980-1984, 1985-1989, 1990-1994, and 1995-1998.

[20] These rates are taken from UNCTAD (1999). They were computed based on the 3-digit SITC classification, revision 2. A value of the index closer to zero means more export diversification and vice versa.

We have adopted the same cross-country regression framework used previously. However, some of the variables were discarded for lack of statistical significance. Other variables were appended in order to reflect either specific characteristics of the region or cross-country differences in terms of factors affecting growth. For instance, we have included government consumption as a ratio to GDP, GCY, to reflect the predominant role of the state in the region and the impact of government-induced distortions. We have also included the share of manufactures in total merchandise exports, MANUF, to reflect the impact of economic diversification (or the lack of it) on growth as well as the extent of competitiveness in international markets. The debt-service ratio, DEBTS, was included to reflect the impact of debt overhang on the growth of many countries in the region.

The other variables we have used are: the share of investment in GDP, INVY; the GDP per capita growth of each country's trading partners weighted by trade shares, GPART; and the level of income per capita in the beginning of each period, YINI.

The model was estimated using the random-effect panel regression method.[21] The estimation results reported in table 13, show that the parameters of all the variables considered were statistically significant and of the expected sign.

Since data were not available for all the countries and for all the years, only a limited number of countries in the sample were used for comparative purposes. Table 14 shows that high investment ratios have contributed significantly to the relative better growth performance of countries like Oman and Tunisia. On the other hand, export diversification and international competitiveness explain the relative better performance of countries such as Tunisia, Turkey, Jordan and Morocco. Debt overhang has negatively impacted growth in Algeria, Morocco and Turkey. Large government size has had a detrimental effect on growth

[21] Hausman's specification statistic for the test of fixed versus random effect model was (1.23 at 6 degrees of freedom) in favor of the latter.

in Jordan, Oman and Saudi Arabia. Variation in trading partner growth has had a notable impact on the growth of oil-exporting countries such as Oman, Saudi Arabia and U.A.E. Finally, the high variation in individual country's intercepts in table 14, points to the fact that the country-specific growth determinants or the unexplained growth, remain relatively high. These individual factors should be tackled at a more disaggregated country-specific level.

5. Concluding Remarks

(1) The overall growth performance of the MENA countries has been both mixed and characterized by a higher degree of volatility in comparison with other regions of the world. Several sources of uncertainty in the region can explain this volatility. These include, among others, fluctuations in world oil prices, weather conditions, workers' remittances, capital flows, not to mention factors contributing to socio-political instability in the region such as civil wars and regional conflicts.

(2) In analyzing the growth pattern of the MENA region within an international perspective, we have found that: capital is less efficient; the natural resource curse more pronounced; trade openness less beneficial to growth; impact of adverse external shocks higher; and the effect of output volatility on growth more detrimental.

(3) In comparison with other regions, TFPG was not an important source of growth in the MENA region. Among the MENA countries included in the sample, only Egypt, Morocco, Tunisia and Turkey had positive TFPG. The quality of institutions and human capital accounted for the lower performance of the MENA countries in terms of TFPG and in comparison with the other regions of the world.

(4) The degree of exposure to internal and external shocks, extent of economic diversification and international competitiveness were relevant factors in explaining variations in growth performance within the MENA region.

In view of the aggregate nature of our study and in light of the above findings, several relevant policy issues deserve further analysis within a country specific context:

- To achieve sustainable growth in the future, MENA countries must take policy measures that should substantially enlarge and diversify their economic base. This should go in tandem with measures needed to enhance their capacity to withstand adverse domestic and external shocks and lessen their exposure to the volatility that the region as a whole has experienced. Political factors apart, far reaching economic and institutional reforms have to be put in place.

- The dominance of the State has given rise to distorted labor market signals that have encouraged employment in the public and other low productivity sectors. MENA educational systems should be reformed so as to be able to dispense the type of education and knowledge that is more in line with the requirements of modern market economies rather than one that prepares graduates for employment in the public sector. Furthermore, closing the wide educational gender gap and reducing illiteracy among women in MENA countries should also be a high priority on the agenda of policy makers in order to improve the quality of human capital in the future.

- Policies of greater openness and integration in the world economy should be vigorously pursued simultaneously with appropriate domestic economic and institutional reforms. These policies, as attested by the experiences of the MENA and other regions, would contribute positively to growth performance.

- Experience has shown that countries endowed with abundant natural resources may tend to delay reform, be less productive and fail to develop a competitive manufacturing sector and a more diversified economy. The outcome would ineluctably be poorer long-term growth prospects, unless appropriate reforms are implemented.

Future research needs to shed important additional lights on the determinants of growth in each of the countries concerned. Among the areas that deserve further investigation are the within regional variation in the role of human and physical capital, the influence of the State and institutions and the relative impact of external and internal shocks as they relate to economic growth. It is equally useful to analyze the way ultimate and proximate determinants of growth interact in each country. It would be an addition to our understanding of the growth process in MENA countries, to show, for instance, how economic policy, institutions, politics and other country characteristics affect the way factors of productions are used and combined.

Finally, it would be desirable to analyze the impact of the sectoral decomposition of growth in MENA countries. Such a decomposition is useful for identifying the sectors that have been successful in achieving better growth performance, expanding investment and employment and raising productivity and earnings. This decomposition should also help explain why certain sectors have been more successful than others.

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APPENDIX

Table 1
Real GDP Per Capita Growth

Group	1961-1970	1971-1980	1981-1990	1991-1998
MENA	3.9	3.0	-1.3	1.4
MENA Oil	5.8	-0.2	-1.6	1.5
MENA Non Oil	2.9	4.2	-0.5	1.5
East Asia & Pacific	4.3	3.6	2.6	2.0
Latin America & Caribbean	2.7	2.3	0.5	2.0
Sub-Saharan Africa	1.8	1.6	0.2	0.3
World	3.1	2.5	1.0	0.6

Source: World Bank, World Development Indicators 2000.

Figure 1:GDP PER CAPITA GROWTH IN INTERNATIONAL PERSPECTIVE

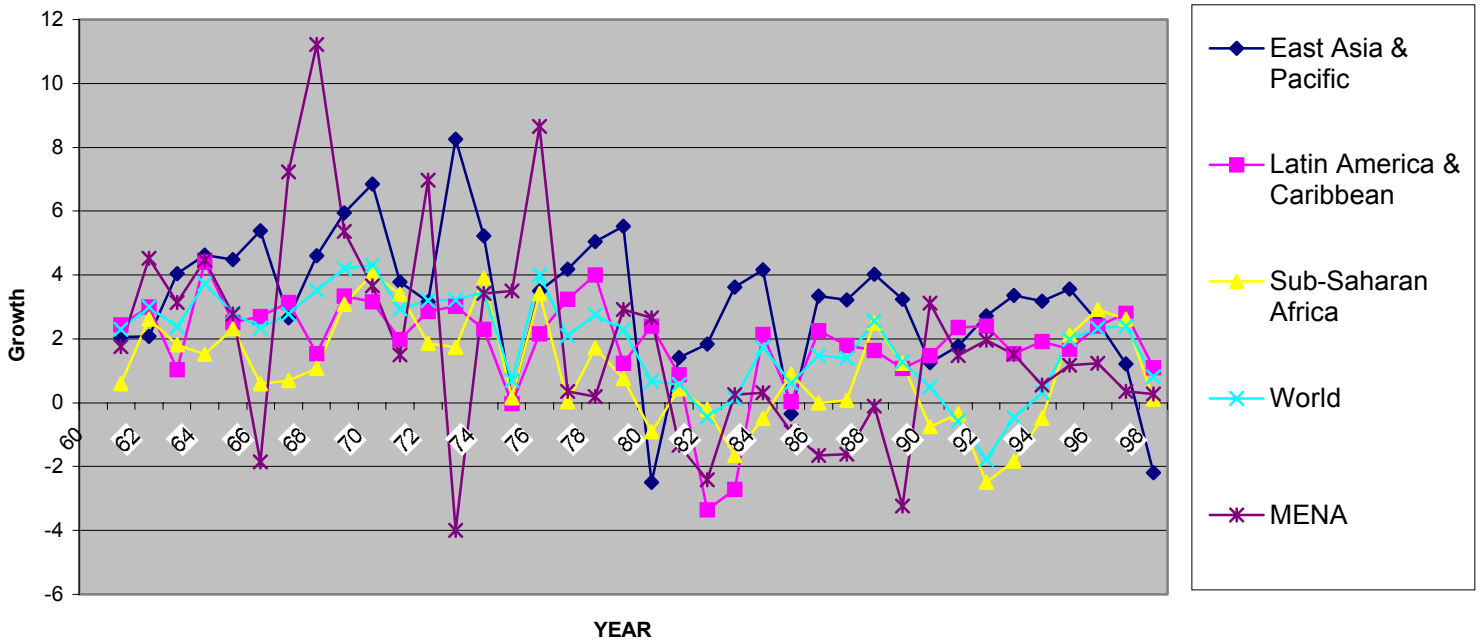

Figure 2: GDP PER CAPITA GROWTH: MENA OIL VS. NON OIL EXPORTING COUNTRIES

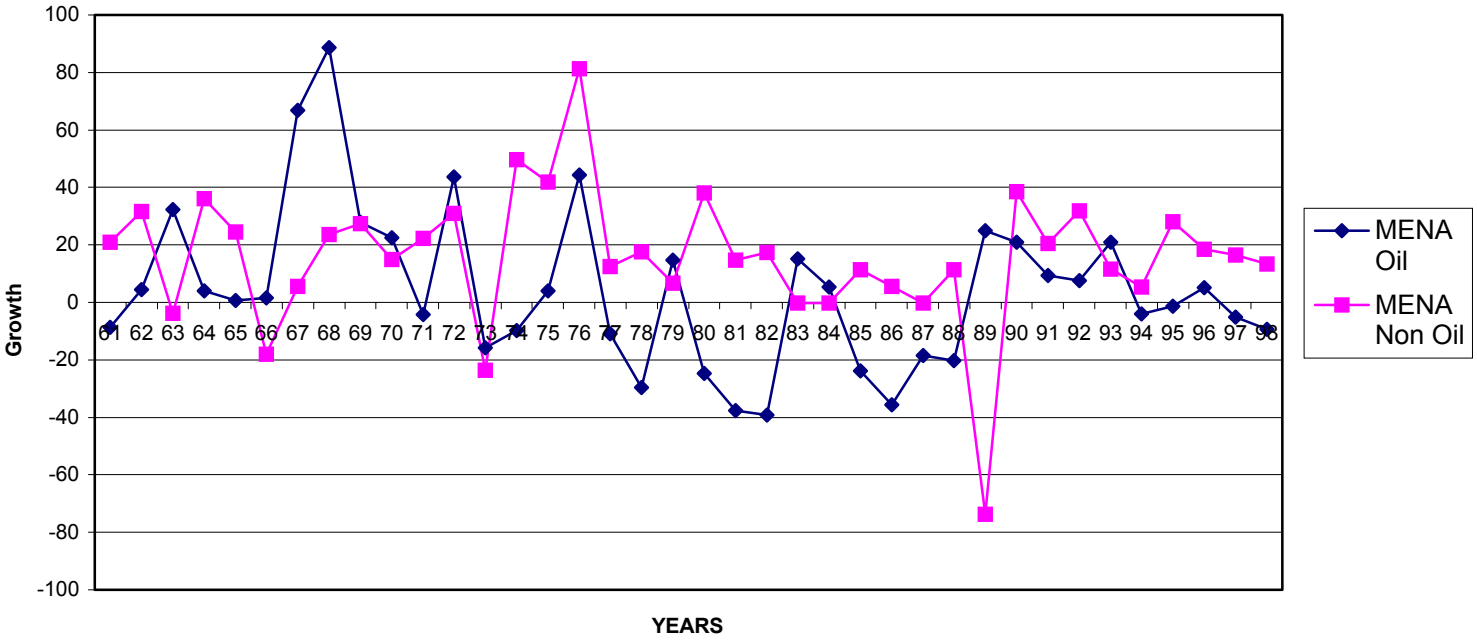

Table 2
Gross Domestic Investment (% of GDP)

Group	1961-1970	1971-1980	1981-1990	1991-1998
MENA	17.4	26.3	24.1	23.3
MENA Oil	21.3	29.1	23.6	22.1
MENA Non Oil	14.9	24.1	24.4	23.9
East Asia & Pacific	19.1	28.6	31.8	35.5
Latin America & Caribbean	20.4	23.6	20.3	20.9
Sub-Saharan Africa	16.9	21.1	17.5	16.8
World	24.3	25.3	23.2	22.2

Source: World Bank, World Bank Development Indicators 2000.

Table 3
Gross Domestic Saving (% of GDP)

Group	1961-1970	1971-1980	1981-1990	1991-1998
MENA	27.5	28.7	16.0	11.2
MENA Oil	47.0	52.6	35.0	27.8
MENA Non Oil	15.3	8.6	7.0	3.7
East Asia & Pacific	16.3	27.1	31.8	36.3
Latin America & Caribbean	20.0	21.9	22.8	19.9
Sub-Saharan Africa	17.2	20.4	17.4	15.7
World	24.2	25.1	23.2	22.6

Source: World Bank, World Bank Development Indicators 2000.

Table 4
Cross- Country Growth Regression Results
Dependent Variable: Real Per Capita GDP Growth

Variable	Coefficient	t-Statistic
Common:		
Constant	-1.844	-1.930
INVY	0.132	3.798*
INFL	-0.002	2.310*
Y60	-0.0003	-4.515
PESENR60	0.017	3.350*
SXP	-2.880	-2.304*
SOPEN	1.245	3.427*
GPART	0.192	0.555
STDG	0.001	0.017
MENA Specific:		
INVY•MENA	-0.152	-4.483*
INFL•MENA	-0.038	6.646*
Y60•MENA	0.001	21.908
PESENR60•MENA	0.004	0.569
SXP•MENA	-5.010	-3.147*
SOPEN•MENA	-1.135	-2.650
GPART•MENA	1.750	4.871*
STDG•MENA	-0.220	-2.529
N= 86 R2-Adj = 0.67		

* Significant at the 5% Level .

Table 5
Speed of Trade Integration

	1980	1985	1990	1995	1996	1997
Trade in Goods and Services:						
East Asia & Pacific	28.7	-4.4	10.5	29.0	-1.3	2.1
South Asia	32.1	-7.4	1.0	28.2	0.4	1.8
Sub-Saharan Africa	2.2	-14.4	-4.7	8.1	5.1	4.3
Europe and Central Asia	8.6	-7.8	5.4	24.2	7.4	5.1
Latin America	9.4	-14.2	23.5	41.3	6.1	7.2
MENA	4.8	-16.9	3.5	3.6	-1.2	3.1
Trade in Manufactures						
East Asia & Pacific	16.9	12.5	26.3	19.9	1.1	6.8
South Asia	9.0	9.0	17.3	44.6	0.3	3.7
Sub-Saharan Africa	3.6	6.9	2.4	5.9	5.4	4.4
Europe and Central Asia	11.5	9.3	3.7	24.5	5.6	5.2
Latin America	2.0	15.7	20.7	28.8	6.7	4.2
MENA	8.9	35.8	20.9	5.0	1.4	2.6

Source: ERF (2000); Economic Trends in the MENA Region.

Table 6
Regional Average Capital Shares

Region	Number of Countries	Average Capital Shares (Short-term version)	Average Capital Share (Long-term version)
Whole Sample (world)	92	0.67	0.59
MENA	11	0.61	0.54
East Asia	6	0.48	0.38
Sub-Saharan Africa	21	0.59	0.48
Latin America	22	0.79	0.78

Table 7
GDP Growth Rate Decomposition (1960-1997)

Country	Growth	Capital	Labor	TFPG	Country	Growth	Capital	Labor	TFPG	Country	Growth	Capital	Labor	TFPG
Algeria	0.031	0.034	0.006	-0.009	Honduras	0.040	0.034	0.010	-0.004	Norway	0.038	0.018	0.006	0.013
Angola	0.012	0.028	0.002	-0.017	Iceland	0.040	0.041	0.001	-0.002	Pakistan	0.055	0.019	0.021	0.015
Argentina	0.026	0.014	0.008	0.003	India	0.044	0.057	-0.002	-0.011	Panama	0.048	0.038	0.012	-0.002
Australia	0.036	0.046	-0.002	-0.008	Indonesia	0.058	0.033	0.015	0.010	Paraguay	0.047	0.042	0.012	-0.006
Austria	0.032	0.034	0.001	-0.003	Iran	0.046	0.049	0.010	-0.013	Peru	0.032	0.052	-0.012	-0.008
Bangladesh	0.035	0.039	-0.006	0.003	Iraq	0.023	0.020	0.020	-0.018	Philippines	0.039	0.041	0.008	-0.010
Belgium	0.029	0.042	-0.001	-0.011	Ireland	0.046	0.006	0.007	0.032	Portugal	0.042	0.058	-0.001	-0.015
Bolivia	0.031	0.013	0.011	0.006	Israel	0.058	0.051	0.003	0.004	Rwanda	0.020	-0.043	0.049	0.014
Brazil	0.048	0.055	0.001	-0.007	Italy	0.033	0.037	0.001	-0.004	Senegal	0.026	0.006	0.019	0.001
Cameroon	0.031	0.048	0.004	-0.021	Jamaica	0.016	0.023	0.004	-0.012	Sierra Leone	0.010	0.038	-0.006	-0.022
Canada	0.037	0.029	0.008	0.001	Japan	0.053	0.063	0.003	-0.013	Singapore	0.080	0.026	0.025	0.029
Chile	0.041	0.033	0.002	0.006	Jordan	0.052	0.116	-0.013	-0.051	South Africa	0.030	0.027	0.009	-0.006
China	0.068	0.063	0.002	0.003	Kenya	0.048	0.029	-0.002	0.021	Spain	0.039	0.050	0.001	-0.011
Colombia	0.045	0.041	0.002	0.001	Korea	0.081	0.065	0.012	0.004	Sri Lanka	0.045	0.011	0.017	0.016
Costa Rica	0.044	0.057	0.002	-0.015	Kuwait	0.022	-0.015	0.056	-0.018	Sudan	0.030	0.028	0.014	-0.012
Cote d'Ivoire	0.049	0.034	0.014	0.002	Libya	0.058	0.165	-0.011	-0.096	Sweden	0.024	0.025	0.003	-0.003
Cyprus	0.056	-0.036	0.020	0.072	Luxembourg	0.036	0.033	0.000	0.004	Switzerland	0.022	0.039	0.001	-0.018
Denmark	0.028	0.020	0.005	0.003	Madagascar	0.013	0.028	-0.004	-0.011	Tanzania	0.038	0.016	0.017	0.005
Dominican Republic	0.048	0.053	0.007	-0.012	Malawi	0.042	0.017	0.018	0.007	Thailand	0.072	0.055	0.012	0.005
Ecuador	0.048	0.029	0.011	0.008	Malaysia	0.069	0.046	0.016	0.007	Trinidad and Tobago	0.021	0.019	0.011	-0.009
Egypt	0.057	0.035	0.011	0.011	Mali	0.033	0.013	0.013	0.006	Tunisia	0.051	0.028	0.012	0.010
El Salvador	0.034	0.037	0.007	-0.011	Malta	0.059	-0.026	0.015	0.070	Turkey	0.050	0.040	0.007	0.003
Ethiopia	0.031	0.043	0.007	-0.018	Mauritius	0.047	0.040	-0.009	0.016	Uganda	0.016	0.013	0.015	-0.012
Finland	0.032	0.022	0.003	0.007	Mexico	0.046	0.063	-0.001	-0.016	United Kingdom	0.023	0.014	0.003	0.006
France	0.032	0.033	0.002	-0.003	Morocco	0.049	0.025	0.013	0.011	United States	0.031	0.047	-0.009	-0.007
Germany	0.030	0.025	0.002	0.004	Mozambique	0.020	0.046	-0.008	-0.019	Uruguay	0.019	0.007	0.004	0.008
Ghana	0.023	0.010	0.018	-0.006	Myanmar	0.034	0.036	0.002	-0.004	Venezuela	0.028	0.012	0.023	-0.006
Greece	0.040	0.047	0.001	-0.008	Netherlands	0.031	0.027	0.005	-0.001	Zaire	0.005	-0.001	0.027	-0.021
Guatemala	0.039	0.031	0.007	0.001	New Zealand	0.025	0.035	-0.001	-0.008	Zambia	0.019	0.003	0.018	-0.002
Guyana	0.015	0.028	-0.011	-0.002	Nicaragua	0.023	0.052	-0.006	-0.022	Zimbabwe	0.039	0.020	0.011	0.008
Haiti	0.008	0.029	0.004	-0.025	Nigeria	0.030	0.008	0.023	-0.001					

Table 8

Determinants of TFPG at Different Values of Capital Share [(1),(2),(3)]

Dependent Variable: TFPG

Variable	$\alpha = 0.3$	$\alpha = 0.4$	$\alpha = 0.5$	$\alpha = 0.6$	$\alpha = 0.7$
ICRG	0.24 (3.00)**	0.18 (2.31)**	0.13 (1.56)	0.07 (0.83)	0.02 (0.20)
INFL	-0.001 (-2.08)**	-0.001 (-1.75)*	-0.001 (-1.44)	-0.0005 (-1.17)	-0.0004 (-0.94)
Y60	0.0004 (-6.62)**	-0.0003 (-5.37)**	-0.0002 (-4.05)**	0.0002 (-2.8)**	-0.0001 (-1.70)
PRIM60	0.02 (2.75)**	0.02 (2.59)**	0.02 (2.41)**	0.02 (2.21)**	0.01 (2.01)**
SXP	-1.71 (-2.01)**	-1.12 (-1.31)	-0.55 (-0.61)	0.03 (0.04)	0.61 (0.62)
EASIA	-0.19 (-0.51)	-0.49 (-1.42)	-0.79 (-2.38)**	-1.09 (-3.30)**	-1.39 (-4.07)**
SSA	-0.89 (-2.60)**	-0.68 (-1.87)*	-0.47 (-1.20)	-0.26 (-0.61)	-0.05 (-0.11)
LATIN	-0.67 (-2.27)	-0.61 (-1.99)**	-0.56 (-1.71)	-0.50 (-1.43)	-0.45 (-1.19)
Adjusted R-squared	0.58	0.45	0.29	0.16	0.09
Number of Observations	75	75	75	75	75

(1) Constant terms not included and t - ratios in parentheses.

(2) Estimation based on White heteroskedasticity-consistent standard errors.

(3) **: significant at the 5% level, *: significant at the10% level.

Table 9
Relative Contribution of Relevant Variables to TFP Growth Differential[(1)]

Variable	Mena-World	Mena-SSA	Mena-Hasia	Mena-Latin
ICRG	-0.18	-0.04	-0.48	0.49
INFL	0.03	0.04	0.00	0.05
Y60	0.39	-0.07	0.05	-0.01
PESENR60	-0.31	0.19	-0.54	-0.21
SXP	0.01	0.06	0.09	-0.13

[(1)]Assumptions:
Mena alpha = 0.5
SSA alpha = 0.5
Hasia alpha = 0.4
Latin alpha =0.7
World alpha = 0.5

Table10
Institutional Indicators of the MENA Region

	MENA (1982)	WORLD (1982)	MENA (1995)	WORLD (1995)
Government Repudiation of Contracts	4.03	5.40	7.78	7.24
Risk of Expropriation	3.05	5.45	8.78	8.55
Corruption in Government	2.28	3.42	3.28	3.56
Rule of Law	1.21	3.30	4.50	4.22
Quality of Bureaucracy	1.43	3.31	3.22	3.52

Source: ERF (1996); Economic Trends in the MENA Region.

Table 11
Average GDP per Capita Growth Rates in Selected MENA Countries (1960-1998)

Country	Period	Average Growth	Standard Deviation of Growth
Algeria	1961-1998	1.14	8.79
Egypt	1961-1998	3.15	3.08
Jordan	1976-1998	2.07	7.97
Kuwait	1969-1998	-2.90	11.35
Mauritania	1961-1998	1.52	6.30
Morocco	1967-1998	2.25	4.61
Oman	1961-1998	7.38	17.52
Saudi Arabia	1961-1998	1.72	6.47
Sudan	1961-1998	0.87	6.21
Syria	1961-1998	2.88	8.52
Turkey	1969-1998	2.37	3.58
Tunisia	1962-1998	3.11	3.82
United Arab Emirates	1974-1998	-2.97	8.64

Table 12
Percentage Sectoral Distribution of Production in Selected MENA Countries:
Averages for the Period 1960-1998

Country	Agriculture	Mining and Quarrying*	Manufacturing	Other Sectors
With Positive Z-Score				
Egypt	22.9	11.5	19.1	46.5
Jordan	8.6	12.3	12.4	66.7
Morocco	18.2	14.1	17.2	50.5
Oman	17.4	55	1.5	26.1
Syria	22.5	9.9	13.5	54.1
Tunisia	15.6	13.9	13.0	57.5
Turkey	25.3	9.0	16.6	49.1
Average	**18.6**	**18.0**	**13.3**	**50.1**
With Negative Z-Score				
Algeria	11.3	34.9	11.4	42.4
Iran	19.7	25.2	10.7	44.4
Kuwait	0.4	54.5	6.9	38.2
Mauritania	31.4	18.4	11.6	38.6
Saudi Arabia	4.6	55.0	7.3	33.1
Sudan	40.9	7.5	7.2	44.4
U.A.E.	1.4	59.5	6.6	32.5
Average	**15.7**	**36.4**	**8.8**	**39.1**

*Includes Construction, Electricity and Gas.
Source: World Bank, World Development Indicators 2000.

Table 13
Panel Data Estimation of Growth Determinants in the MENA RegionDependent Variable:
Per Capita GDP Growth Rate

Variable	Coefficient	T-Ratio
INVY	0.15	2.46**
DEBTS	-0.10	-2.91**
GPART	0.91	2.48**
MANUF	0.03	1.72*
YINI	-0.0004	-4.48**
GCY	-0.16	-2.33**

Number of Countries = 15; Number of observations used = 61;R^2-adj = 0.51; Country intercepts not reported.
**Significant at the 5% level, *Significant at the 10% level.

Table 14
Relative Contribution of Relevant Variables to Growth Differential in Selected MENA Countries

Country	Predicted Growth	INVY	DEBTS	GPART	MANUF	YINI	GCY	Individual effect
Algeria	0.36	4.88	-4.38	1,65	0.07	-0.98	-2.44	1. 54
Bahrain	-1.21	3.94	0.00	0.36	0.27	-3.74	-3.41	1.36
Egypt	2.93	3.27	-1.76	1.90	0.91	-0.60	-2.60	1.81
Iran	-0.03	3.72	-0.27	1.50	0.08	-1.69	-3.13	-0.23
Jordan	2.19	4.52	-1.56	1.52	1.40	-1.10	-4.23	1.64
Morocco	1.66	3.56	-3.02	1.45	1.34	-0.71	-2.72	1.76
Oman	3.15	4.16	-0.35	2.64	0.55	-2.46	-4.23	2.85
Saudi Arabia	0.02	3.18	0.00	2.37	1.15	-3.37	-4.09	1.77
Sudan	0.45	1.96	-1.75	1.35	0.04	-0.30	-1.93	1.09
Syria	1.67	3.47	-1.36	1.52	0.67	-1.58	-2.60	1.54
Tunisia	3.09	4.11	-1.91	1.55	1.85	-0.98	-2.45	0.92
Turkey	2.33	2.95	-2.58	1.39	1.58	-1.13	-1.65	1.78
U.A.E.	-3.09	4.23	0.00	2.28	0.99	-9.25	-2.55	1.22